Equal partners? Improving the integration between DSpace and Symplectic Elements

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Session Type:

☐ Presentation

Abstract

While self-submission by academics was regarded as the ideal way to add content to Open Repositories in the early days of such systems, the reality today is that many institutional repositories obtain their content automatically from integration with research management systems. The institutional DSpace repositories at Auckland University of Technology (AUT) and at the University of Waikato (UoW) were integrated with Symplectic Elements in 2010 (AUT) and in 2014 (UoW). Initial experiences at AUT suggested a mismatch between the interaction options offered to users of Symplectic Elements on one hand and the actions available to repository managers via the DSpace review workflow functionality on the other hand. Our presentation explores these mismatches and their negative effects on the repository as well as on the user experience. We then present the changes we made to the DSpace review workflow to improve the integration. We hope that our experiences will contribute to an improvement in the integration between repository software and research management systems.

Conference Themes:

☐ Integrating with External Systems
☐ Building the Perfect Repository

Keywords

Integration between DSpace and Symplectic Elements; Review workflows

Audience

Repository managers; repository developers; developers of CRIS / research management systems and other systems feeding into repositories

Background

Our presentation helps shape the "perfect repository" by demonstrating how we overcame shortcomings in the DSpace review workflow when items are submitted to DSpace via Symplectic Elements.

Presentation content

The institutional repository for Auckland University of Technology (AUT), Scholarly Commons[1], was established in 2006. AUT went live with Symplectic Elements in 2011. At that point, Scholarly Commons contained mostly theses and dissertations. AUT have a 100% full-text policy for items publicly available in Scholarly Commons. Theses and dissertations are submitted via SWORD, using a stand-alone submission form.

Symplectic Elements was adopted by AUT primarily to store metadata and evidence files for research outputs produced at AUT, as required for New Zealand's national research assessment exercise, Performance-Based Research Funding (PBRF). Scholarly Commons was to act as the file store for Symplectic Elements. Where possible, research outputs were to be made publicly available in Scholarly Commons. A "dark" community and collection structure was set up in Scholarly Commons. Several customisations of the DSpace code base were put in place to prevent unauthorised access to "dark" items. Items coming in via Symplectic Elements were routed to one of the dark collections but were accepted into the repository immediately, without going through the DSpace workflow process. Other dark collections were used by repository staff to facilitate their work, for example as a temporary holding place while permission for an item to be included in the public part of Scholarly Commons was requested from the publisher or as a permanent location for items not suitable for the public part.

The institutional repository for the University of Waikato (UoW), Research Commons[2], was established in 2007. UoW went live with Symplectic Elements in 2014. At that time, Research Commons contained around 1,800 theses and around 6,000 other research outputs, with full text available for about 50% for the latter. The submission of research outputs was fully mediated by repository staff. Theses are submitted to the repository via SWORD; this simple standalone process was retained after the Symplectic Elements integration due to the complexity of requiring students to submit theses via the Elements interface. Research Commons acts as the file store for Elements, containing evidence files for PBRF as well as files able to be made openly available. Access to the files is managed via the DSpace resource policy mechanism.

We believe the integration between Symplectic Elements and DSpace was designed based on the concept that academics would have a full knowledge of issues affecting the inclusion of full text evidence in a repository. These include understanding the purpose and outcomes of a repository; understanding the implications of granting a licence in Elements; understanding the consequences of their copyright agreements with publishers; and understanding the intricacies of versions of a publication and embargo periods.

[1] http://aut.researchgateway.ac.nz
[2] http://researchcommons.waikato.ac.nz

The reality is that the majority of academics have no interest in any of these, and a best case scenario is to get them uploading evidence of some type and then granting the licence. Additionally UoW found that many faculties preferred to have their research administrators handle the Elements submissions, leaving academics out of the process entirely. Unfortunately the result is that the processing of the evidence (and editing of metadata) is left entirely in the hands of repository administrators. There is a need to manage issues of copyright, embargoes, versions and publisher permissions, from within the repository, creating delays and difficulties when using the default Elements and DSpace options.

In addition we found that the Symplectic Elements and DSpace integration leads to two major problems - the creation of duplicate (and multiple duplicate) items which must be managed manually, and item identifiers which may change over time. These were partly exacerbated by AUT's initial decision to use dark collections with immediate inclusion in the dark collections for items sent from Elements. Any file change within Elements generates a duplicate item within DSpace, which is expected to replace the existing DSpace item. This meant that our repositories would no longer be able to promise to provide a permanent, stable URL for our items.

AUT's and UoW's repositories are both hosted and supported by the University of Waikato's Information Technology Services Division [1]. This arrangement provided an opportunity for repository staff at AUT and UoW to share their experiences. AUT and UoW decided to pool development resources in order to modify the DSpace review workflow to improve the integration between the two software systems and to overcome the issues encountered at AUT. Changes to the review workflow include:

- Separate the list of workflow tasks by submission source (SWORD submissions vs Symplectic Elements submissions vs DSpace submission).
- For Symplectic Elements submissions, add two temporary states: "with academic" and "with publisher". This enables repository staff to more easily keep track of the copyright permission process. List tasks in these states separately and add an action to move them back to the main workflow tasks list.
- For Symplectic Elements submissions, add a flag to each workflow task that indicates whether the task represents a new item or a change to an item already in the repository. Also add a link to the corresponding item in Symplectic Elements.
- For a workflow task that represents a new item, change the "accept" action to include a step that moves the item into a public collection in the repository.
- For a workflow task that represents a change to an item already live in the repository, show what the changes are at the file level and add an action to move files between the live item and the workflow task (as well as between public and non-public bundles). Show a link to the existing item. Add an action to discard the workflow task and redirect

Symplectic Elements to the existing item. Add an item to approve the workflow task (choosing a public destination collection) in case that repository staff wish to withdraw the existing item; it is anticipated that this will be needed only rarely.
- Add actions to apply an embargo to an item and/or its files as well as to edit the item's metadata and files using the same tools available normally only for already live items. This includes the ability to move files between public and non-public bundles.

These changes have been live in AUT's and UoW's repositories since the second half of 2014; UoW used the customisations from the initial go-live of Symplectic Elements and AUT switched over to the customisations. At AUT there has been significant improvement in three areas:

- The workflow process within Scholarly Commons is much more transparent and better understood by those involved. The two primary staff managing the processing of outputs from Symplectic Elements are able to coordinate and share tasks better.
- The above plus efficiency increases in mechanical processes (for example the amount of work involved in adding an item to a public collection) has significantly reduced processing time for research outputs and enabled the backlog to be eliminated.
- Issues around duplicate items and persistent identifiers have been eliminated.

Issues still remain in three areas:

- The fact that an item is not able to be included in the repository (or must be withdrawn) must be communicated manually to the academic.
- The Symplectic Elements user interface for managing evidence files remains confusing and not user friendly. This is particularly noticed around the revocation of the repository licence and the expectations if this is performed.
- Notifications to repository administrators from Symplectic Elements are non-existent. This is an area of integration which needs to be addressed and cannot be improved from the DSpace end.

Conclusion

Many of the issues we encountered in the integration between DSpace and Symplectic Elements apply equally to other software platforms for repositories / research management systems. We anticipate that our case study will encourage a revisit of assumptions on both sides about the interaction between such systems that will lead to implementation changes, which in turn we anticipate will improve the integration of repositories with research management systems.

References

[1] A. Brown, A. Lockett, C. Murdoch, K. Nixon, A. Schweer (2012). The Library Consortium of New Zealand's Shared IRR Infrastructure. Paper presented at Open Repositories 2012.